

REMARKS

Claims 1-15 and 17-20 remain in the application.

The Rejections:

In the Final Office Action dated August 23, 2006 the Examiner rejected Claims 1, 4, 9, and 10 under 35 U.S.C. 103(a) as being unpatentable over Nakai et al. U.S. Patent No. 5105109 in view of Yuichiro et al. JP Publication No. 2000-255941.

Regarding Claim 1, the Examiner stated that Nakai discloses an elevator counterweight 3 for connection to an elevator car 4 by flexible support means, referred to as ropes 6, and movable along counterweight guide rails 8 comprising a counterweight frame, referred to as casing frame 17, adapted to be connected to the flexible support means 6 and moved along the counterweight guide rails 8, a plurality of weight elements, referred to as counterweights 2, fixed in the frame 17, upper and lower guide shoes, not numbered but shown in Figure 1, attached to the frame 17 and adapted to engage the counterweight guide rails 8; and the frame 17 including four vertical beams, not numbered but shown in Figures 1 and 7, spaced over a width of the frame 17 and three horizontal crossbars, not numbered but shown in Figures 1 and 7, attached to the vertical beams, the crossbars extending over the width of the frame, the beams and the crossbars forming two grid fields adapted to receive the weight elements 2 with the weight elements 2 being fixed in the grid fields.

The Examiner commented that Nakai is silent concerning the beams and said crossbars forming at least four grid fields adapted to receive the weight elements. The Examiner stated that Yuichiro teaches a balance weight divided in the vertical direction by a crossbar, referred to as partition plate 19, creating a first subweight 22 and a second subweight 20, and it would have been obvious to one of ordinary skill in the art at the time of the invention to divide each of the two grid fields disclosed by Nakai by a partition plate, a first subweight, and a second subweight as taught by Yuichiro thus creating four grid fields adapted to receive the weight elements to provide a means to adjust the weight of the counterweight to rescue passengers in a car stopping at the top of a hoist way in an elevator.

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Regarding Claim 4, the Examiner stated that Nakai discloses the beams and the crossbars are arranged in a common plane, shown in Figures 1 and 7.

Regarding Claim 9, the Examiner stated that Nakai discloses the beams prevent horizontal movement of the weight elements 2 in the grids.

Regarding Claim 10, the Examiner stated that Nakai discloses the weight elements 2 are formed as rectangular blocks.

The Examiner rejected Claims 2 and 3 under 35 U.S.C. 103(a) as being unpatentable over Nakai in view of Yuichiro, and further in view of Yoo et al. U.S. Patent No. 5080201.

Regarding Claim 2, the Examiner stated that Nakai discloses a first one of the crossbars terminates the frame 17 at a top, a second one of the crossbars terminates the frame 17 at a bottom and a third one of the crossbars is arranged between the first and second crossbars, each outermost one of the beams extending only from the first crossbar to the third crossbar so that a lower left-hand one of the grids and a lower right-hand one of the grids are open at a respective left-hand side and right-hand side, shown in Figures 1 and 7.

The Examiner commented that Nakai is silent concerning the lower guide shoes being mounted in the lower left-hand grid and the lower right-hand grid. The Examiner stated that Yoo teaches lower guide shoes, referred to as guide roller sets 10, being mounted in a lower left-hand grid and a lower right-hand grid, shown in Figures 1 and 2, and it would have been obvious to one of ordinary skill in the art at the time of the invention to mount guide rollers disclosed by Nakai in a lower left-hand grid and a lower right-hand grid as taught by Yoo to facilitate airflow around the counterweight.

Regarding Claim 3, the Examiner stated that Nakai discloses a third crossbar fastened to the beams in a selected one of two vertically spaced positions to determine a height of the lower left-hand grid and the lower right-hand grid, shown in Figures 1 and 7.

The Examiner rejected Claim 5 under 35 U.S.C. 103(a) as being unpatentable over Nakai in view of Yuichiro, and further in view of Gruber et al. U.S. Patent No. 6105798. The Examiner commented that Nakai is silent concerning beams penetrate the crossbars and are connected with the crossbars at penetration locations. The Examiner stated that Gruber teaches beams 26, 28 penetrate the crossbars 30 and are connected with the crossbars at penetration locations 30, and it

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would have been obvious to one of the ordinary skill in the art at the time of the invention to make the beams taught by Nakanishi penetrate crossbars and connect with the crossbars at penetration locations taught by Gruber to evenly distribute the load onto the crossbars and facilitate a secure connection between beams and crossbars.

The Examiner rejected Claims 6 and 11 under 35 U.S.C. 103(a) as being unpatentable over Nakai in view of Yuichiro, and further in view of Gagnon et al. U.S. Patent No. 5086881.

Regarding Claim 6, the Examiner commented that Nakai is silent concerning beams formed with profile members having a U-shaped cross-section. The Examiner stated that Gagnon teaches beams formed with profile members having a U-shaped cross-section, and it would have been obvious to one of the ordinary skill in the art at the time of the invention to manufacture the beams disclosed by Nakanishi with a U-shaped cross-section taught by Gagnon et al. to securely fix weight elements between the beams.

Regarding Claim 11, the Examiner commented that Nakai is silent concerning the beams are spaced to define a first width for a first portion of said grid fields and a second width different from the first width for at least a second portion of the grid fields. The Examiner stated that Gagnon teaches beams spaced to define a first width for a first portion of grid fields and a second width different from the first width for at least a second portion of the grid fields shown in Figures 1, 2, and 3, and it would have been obvious to one of the ordinary skill in the art at the time of the invention to have beams disclosed by Nakanishi spaced to define a first and second width of a grid field taught by Gagnon et al. to provide a diverse size of grids to accommodate various sized components.

The Examiner rejected Claims 8 and 14 under 35 U.S.C. 103(a) as being unpatentable over Nakai in view of Yuichiro, and further in view of Nakanishi U.S. Patent No. 5300737.

Regarding Claim 8, the Examiner stated that Nakai discloses safety brake devices. The Examiner commented that Nakai is silent concerning the safety brake devices attached to a lower surface of an intermediate one of the crossbars. The Examiner stated that Nakanishi teaches safety brake devices 29, 30 are attached to a lower surface of an intermediate one of a crossbar, referred to as lower plate member 14b, through support shaft 25, and it would have been obvious to one of ordinary skill in the art at the time of the invention to attach the brake devices disclosed

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by Nakai et al. to a lower surface of an intermediate one of a crossbar through support shaft as taught by Nakanishi to facilitate the connection between the counterweight and the break devices.

Regarding Claim 14, the Examiner commented that Nakai is silent concerning an uppermost and/or lowermost one of the crossbars has a center horizontal welding plate for fastening support means or weight compensating means. The Examiner stated that Nakanishi teaches an uppermost crossbar 14a having a center horizontal welding plate 19 for fastening support means 4a, 4b, 4c, and it would have been obvious to one of ordinary skill in the art at the time of the invention to provide a center horizontal welding plate as taught by Nakanishi to an uppermost crossbar for fastening support means disclosed by Nakai to facilitate the connection between the crossbar and the support means.

The Response:

Applicant appreciates the allowance of Claims 15 and 17-20.

Applicant's Claim 1 defines an elevator counterweight having a frame "including at least four vertical beams spaced over a width of said frame and at least three horizontal crossbars attached to said vertical beams, said crossbars extending over the width of said frame, said beams and said crossbars forming at least four grid fields adapted to receive said weight elements with said weight elements being fixed in at least one of said grid fields." The Examiner rejected Claim 1 as being unpatentable over Nakai in view of Yuichiro.

Fig. 7 of Nakai is reproduced below with reference characters A through I added to identify elements associated with the counterweight frame.

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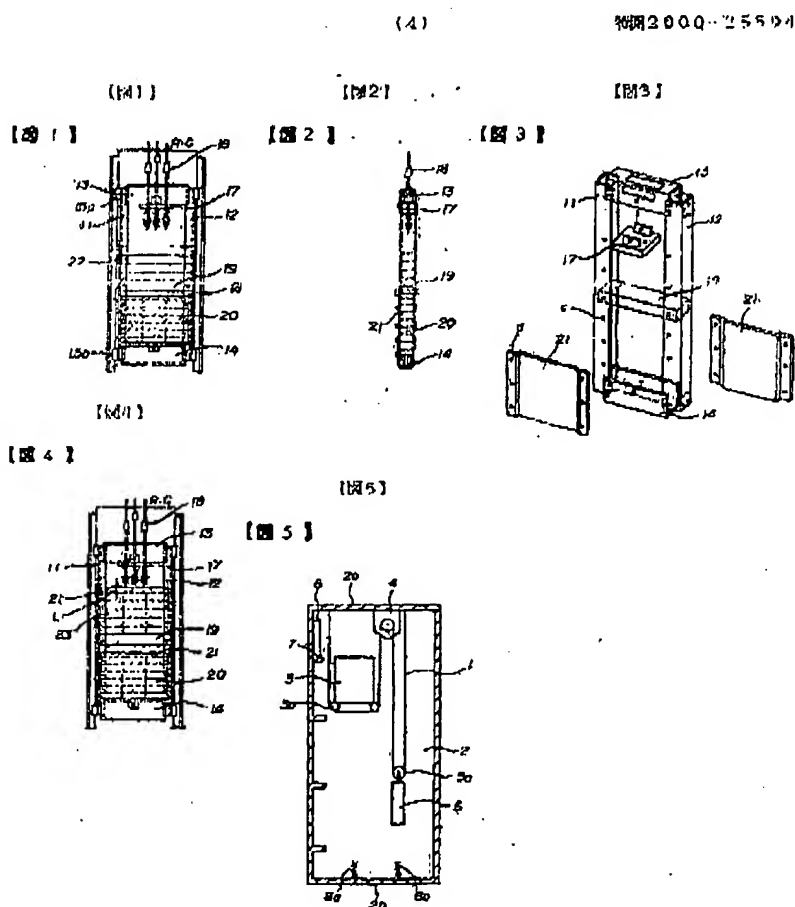


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width of the frame, wherein the beams and the crossbars form at least four grid fields adapted to receive the weight elements. Nakai shows only two crossbars E, F attached to the beams A, B, C, D and only two grid field adapted to receive the weights.

Yuichiro teaches a balance weight having a frame body with two vertical beams 11, 12 attached at opposite ends by crossbars 13, 14 to form a grid field for weights. A horizontal partition plate 19 is connected between the beams 11, 12 to divide the grid into two spaces for receiving a first sub weight 22 above the partition and a second sub weight 20 below the partition as shown in the following Yuichiro drawings.



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The Examiner suggests that it would have been obvious to one of ordinary skill in the art at the time of the invention to divide each of the two grid fields disclosed by Nakai by a partition plate, a first subweight, and a second subweight as taught by Yuichiro thus creating four grid fields adapted to receive the weight elements to provide a means to adjust the weight of the counterweight to rescue passengers in a car stopping at the top of a hoist way in an elevator. Although such a combination would result in four grid fields, it would not have all of the elements recited in Applicant's Claim 1. One partition plate would extend between the beams A, B and the other partition plate would extend between the beams C, D. Therefore, the added partition plates would not "extend over the width of the frame".

Claim 1 defines at least three horizontal crossbars attached to the vertical beams, the crossbars extending over the width of the frame, the beams and the crossbars forming at least four grid fields adapted to receive the weight elements. Such a counterweight is neither shown in nor suggested by Nakai and Yuichiro. Thus, Applicant believes that Claims 1-14 are allowable.

In view of the amendments to the claims and the above arguments, Applicant believes that the claims of record now define patentable subject matter over the art of record. Accordingly, an early Notice of Allowance is respectfully requested.

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